

# The MT Laboratory Sentinel

Updates from the MT Laboratory Services Bureau  
<http://healthlab.hhs.mt.gov/> 01/04/10



## Laboratory Response Network

Responding to Public Health Threats

The Laboratory Response Network (LRN)  
The Nation's Laboratory Emergency Response System

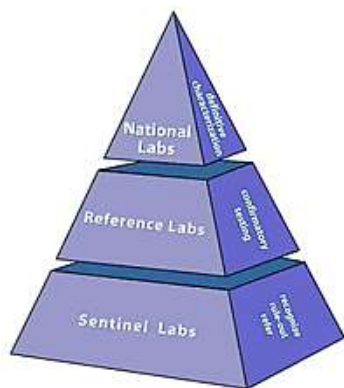
In the late 1990s, most Americans were more concerned about a computer bug than a biological one. While the nation's collective attention was fixed on Y2K, a small group of CDC staff and their colleagues at the FBI, Department of Defense (DOD) and Association of Public Health Laboratories (APHL) were quietly piecing together a network of public health laboratories that would later become a model for laboratory preparedness around the globe. The first plan for the LRN was sketched on a cocktail napkin following a long day of meetings.

The Laboratory Response Network, a diverse network of domestic and international laboratories, provides diagnostic capacity to identify agents that may be connected to biological or chemical terrorism events and infectious diseases. Approximately 170 LRN Reference Laboratories (dealing with a variety of public health issues) are located in all 50 U.S. states and abroad. Hospital and clinical laboratories refer suspicious specimens to LRN Reference Laboratories, the majority of which are state Public Health Laboratories. Prior to the LRN, samples would have been packaged and shipped to CDC for testing and confirmation. Today the samples are tested at LRN Reference Laboratories. MTPHL is the only LRN Reference Laboratory in Montana.

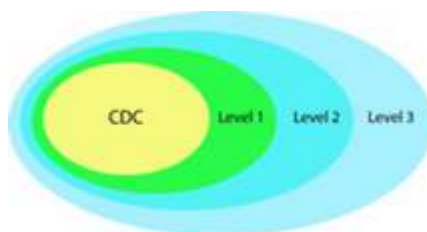
The groundbreaking work of this network can claim credit for reinvigorating state public health labs that had lost their stature due to the rise of for-profit health systems, and for advancing rapid-testing technology for bioterrorism and chemical agents, as well as emerging infectious diseases. The idea that decentralization and transferring rapid-testing technology would stand at the frontline of public health emerged in 1998, after intelligence following the collapse of the Soviet Union revealed that biological or chemical terrorism was an imminent threat.

This year marks the 10th anniversary of the LRN. In the decade since its creation, the LRN has answered the call to prepare for and respond to the public health threats of our day. Just two years into the program, the LRN played a pivotal role in identifying *Bacillus anthracis* in the first victim of the 2001 anthrax attacks. SARS, monkeypox, *E. coli* food contamination, ricin toxin and H5N1 (Asian influenza) top the list of the LRN's participation in national public health preparedness and response.

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The Biological LRN



The Chemical LRN

## Influenza Update MT Public Health Laboratory

Influenza workload volume at MTPHL continues to decrease.

During Week 51, only one of 53 specimens tested was positive for Influenza A 2009 H1N1 subtype. The year ended by detecting H1N1 in 3 of 43 specimens during Week 52.

Workload data is available on our website at:

<http://www.dphhs.mt.gov/PHSD/Lab/envirom-lab-index.shtml>

## West Nile Virus May Lead to Kidney Problems



People who have been infected with West Nile virus (WNV) may have persistent virus in their kidneys for years after initial infection, according to a study at the University of Texas School of Public Health in Houston. Findings detailed in the January 1, 2010 issue of *The Journal of Infectious Diseases* indicate that the virus can remain in the kidneys of some individuals for years, potentially leading to kidney failure. WNV RNA was demonstrated in 20% of urine samples collected from convalescent patients 1.6–6.7 years after WNV infection. These findings show that individuals with chronic symptoms after WNV infection may have persistent renal infection over several years. The finding of viral RNA in the urine of these patients is suggestive of ongoing viral replication in renal tissue, which is consistent with the hamster model.

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(LRN's 10<sup>th</sup> Anniversary, continued) CDC's commitment to the LRN development involved cross-cutting many of its branches and partnering agencies. Millions of dollars were provided to the states to improve the public health infrastructure through cooperative agreements. LRN's accomplishments include the development of:

- Standardized tests & reagents and deployed these to LRN laboratories to test for biological and chemical threat agents.
- Materials/reagent stockpile for transferred methodologies.
- Training courses for scientists all over the country to identify threat agents.
- A restricted access Web site that provides communication from CDC, access to protocols and methods, the ability to order reagents, enrollment in training courses, and a tool to help labs identify the testing capability of other member labs and refer samples as needed.
- LRN Results Messenger which was the first Web-based application allowing LRN laboratories to send data electronically to CDC in a standard and secure format.
- Robust quality assurance program that provides reliability in test results.
- Incident Response Laboratory to respond to large scale air toxicant exposures utilizing the Rapid Toxic Screen

The LRN's success in responding to the 2001 anthrax letters established it as a national asset in public health emergency preparedness and response. The LRN expanded in the years that followed 2001. In 2003, the LRN added the Chemical Agent testing network. The expansion of the LRN was driven by national security needs, but executed through an array of internal and external partnerships.

The creation of the LRN involved public health working together with law enforcement to address national security threats and led to a strong partnership that continues today. The LRN also maintains active partnerships with the Department of Homeland Security, American Association of Veterinary Laboratory Diagnosticians, Environmental Protection Agency, Food and Drug Administration, U.S. Department of Agriculture, American Society of Microbiology, Department of State, Customs and Border Protection, and a number of international government agencies, such as public health agencies in Canada, Mexico and Australia. These partnerships have helped remove obstacles that can impede responses, and serve as the cornerstone of the LRN's successes.

In just 10 short years, the LRN has built a proud history. It has restored America's public health laboratories to their rightful place in protecting the public's health, and is regarded as a national asset for preparedness and response. But LRN leadership and its members are not content with past successes. There is an understanding that the LRN must continue to evolve and meet future threats, large and small. Looking ahead, continuing the LRN strategy to include all-hazards will require the same adept collaboration and partnership with stakeholders in emerging infectious disease prevention. Developing the capacity to test and respond to a radiological event is a key strategic initiative for the next few years.

Today, the LRN is charged with the task of maintaining an integrated network of state and local public health, federal, military, and international laboratories that can respond to bioterrorism, chemical terrorism and other public health emergencies. The LRN is a unique asset in the nation's growing preparedness for biological and chemical terrorism. The linking of state and local public health laboratories, veterinary, agriculture, military, and water- and food-testing laboratories is unprecedented.

## West Nile Virus Con't from page 1



WNV is an important flavivirus in North America. Since WNV was first detected in the United States in 1999, ~25,000 human clinically evident infections have been reported, with >1000 deaths. Less than 1% of WNV-infected people develop acute neuroinvasive disease (including meningitis, encephalitis, and flaccid paralysis) or death.

The public health impact of these findings is considerable. It will be important to explore and understand the underlying mechanisms related to the shedding of viral RNA in the urine, whether shedding is constant or intermittent, and whether this represents true infection resulting in clinically evident disease.

The Journal of Infectious Diseases 2010;201:2-4

<http://newsmanager.commpartners.com/aphl/issues/2009-12-17.htm#5> or  
<http://www.journals.uchicago.edu/doi/abs/10.1086/648731>

*No single raindrop can  
be blamed for causing a  
flood,  
nor any single star  
credited with lighting  
up the night sky.*

## 2001 Anthrax Attacks

The LRN proved its value in 2001 when state and local public health laboratories labs tested 125,000 samples and conducted over 1,000,000 tests.

The Montana Public Health Laboratory tested 170 samples from clients and the US Post Offices during this period.

# MT Communicable Disease Update as of 01/01/10

This newsletter is produced by the Montana Communicable Disease Epidemiology Program.

Questions regarding its content should be directed to 406.444.0273 (24/7/365).

<http://cdepi.hhs.mt.gov>

## **DISEASE INFORMATION**

**Summary – Week 50 & 51 – Ending 12/19/09 & 12/26/09** – Disease reports received at DPHHS during the reporting period December 13-26, 2009 included the following:

- Vaccine Preventable Diseases: Pertussis (1), Varicella (1)
- Enteric Diseases: Campylobacteriosis (1), Cryptosporidiosis (2), Giardiasis (3), Salmonellosis (2)
- Other Conditions: Legionellosis (1), Aseptic Meningitis (1)
- Travel Related Conditions: None

## **THE “BUZZ”**

**Influenza** During week 51 (12/16/09), influenza activity continued to decrease in the U.S., with only four states reporting widespread cases. Influenza and pneumonia mortality was slightly above the epidemic threshold of 7.4% at 7.7%. The proportion of outpatient visits for influenza-like illness (ILI) was 3.2% which is above the national baseline of 2.3%. Ninety-nine percent of the influenza viruses identified so far are 2009 H1N1 influenza A viruses. These viruses remain similar to the virus chosen for the 2009 H1N1 vaccine, and remain susceptible to the antiviral drugs oseltamivir and zanamivir with rare exception.

*Influenza is unpredictable. Although the incidence of disease is decreasing, it's possible that other waves of influenza activity may occur – caused by either 2009 H1N1 viruses or regular seasonal flu viruses.*

**Even though influenza incidence is decreasing, persons in targeted groups who have not been vaccinated should get vaccinated!**

**UPDATE! Activity in Montana** – Activity in Montana is at the **LOCAL** level. There are still cases being reported in certain parts of the state; however, the number of PCR confirmed cases has dropped significantly. Information on testing can be found at <http://www.dphhs.mt.gov/PHSD/Lab/envirom-lab-index.shtml>. **2009 influenza A (H1N1) continues to predominate - no other subtypes of influenza A are circulating at this time in Montana.**

**DO NOT send rapid test positive influenza A specimens to the MPHL for confirmation at this time.** We are currently assessing the positive predictive value of rapid tests and will provide guidance during the next 1-2 weeks regarding any changes to surveillance activities. *Please continue to send rapid test positive **influenza B** specimens to the MPHL for confirmation.*

**IMPORTANT! Hospitalized/Death Reporting** - *Please report all laboratory confirmed (PCR, rapid test, viral culture positive) hospitalized cases and deaths due to all types of influenza to the local health department who will then report to the state. Period of interest: August 30, 2009 – present.*

**NEW! Reporting Reconciliation** – CDEpi will begin the process of reconciling 2009 data in January. Watch for line lists sent via ePASS from Elton Mosher. Please review these line lists to ensure that disease cases that we have match those that are in your records. *Goal is to have this activity completed by March 1, 2010!* Thanks for your assistance!

**NEW! iLINC on Rash Illnesses** – There will be an iLINC on Rash Illnesses on January 5 with a repeat on January 7. Announcement is attached.

## **Montana Influenza Reports**

- *Montana Public Health Prevention Opportunities Under the Big Sky*  
2009 H1N1 INFLUENZA: A status report  
[http://www.dphhs.mt.gov/PHSD/prevention\\_opps/pdf/MPHDec09-h1n1-report.pdf](http://www.dphhs.mt.gov/PHSD/prevention_opps/pdf/MPHDec09-h1n1-report.pdf) and attached
- Surveillance Snapshot – Reported H1N1 Influenza Hospitalizations  
Information on reported hospitalizations in Montana 9/1/09 – 11/30/09  
[http://www.dphhs.mt.gov/PHSD/epidemiology/documents/SurveillanceSnapshot-H1N1\\_Hosp.pdf](http://www.dphhs.mt.gov/PHSD/epidemiology/documents/SurveillanceSnapshot-H1N1_Hosp.pdf)